A. D. 1877. Feb. 17. Nº 654.
CROCHET'S Specification.

(1 SHEET)

FIG. 1.

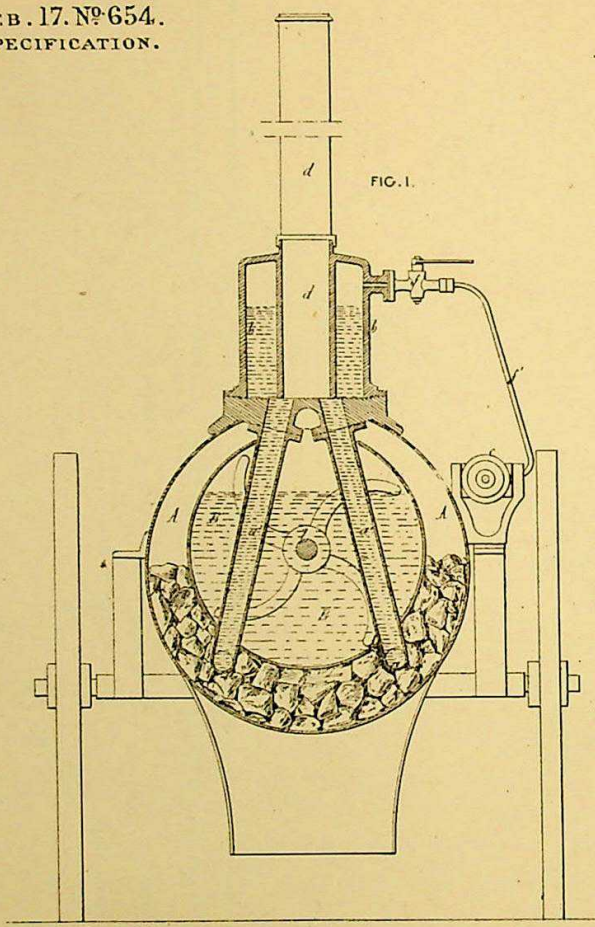
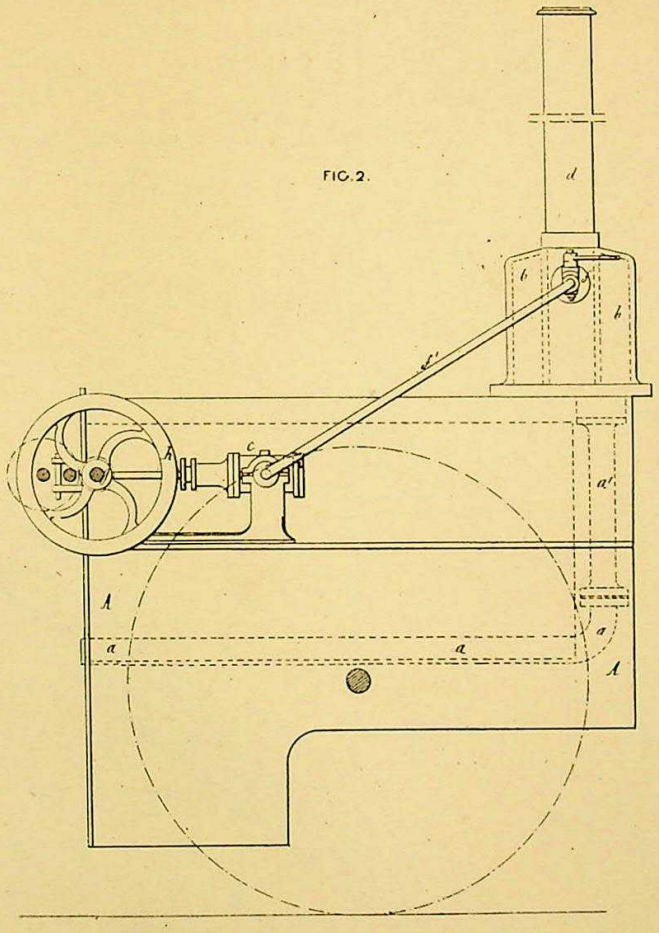


FIG. 2.



The filed drawing is not colored.

Malby & Sons, Photo-Litho.

London: Printed by George Edward Eyre and William Spottiswoode.
Printers to the Queen's most Excellent Majesty. 1877.

654 — 2. 1877 crochet

A.D. 1877, 17*th* FEBRUARY. N° 654.

Apparatus for Working Up and Heating Bituminous Substances, &c.

LETTERS PATENT to Paul Crochet, of Paris, Boulevard Magenta, No. 49, Gentleman, for the Invention of "AN IMPROVED APPARATUS COMBINED WITH A STEAM CYLINDER FOR WORKING UP AND TORREFYING BITUMINOUS AND OTHER SUBSTANCES."

Sealed the 20th July 1877, and dated the 17th February 1877.

PROVISIONAL SPECIFICATION left by the said Paul Crochet at the Office of the Commissioners of Patents on the 17th February 1877.

PAUL CROCHET, of Paris, Boulevard Magenta, No. 49, Gentleman. "AN IMPROVED APPARATUS COMBINED WITH A STEAM CYLINDER FOR WORKING UP AND TORREFYING BITUMINOUS AND OTHER SUBSTANCES."

My Invention relates to apparatus for working up and heating or melting asphalte or other bituminous matters and the like, wherein such bituminous matters are contained in a vessel or cauldron, in which are revolving or reciprocating stirrers, and which is heated by a fire and flue wholly or partially surrounding it and leading to a chimney.

My improvements have for their object to utilise the heat of the fire employed for the above purpose for producing the requisite motive power for actuating the revolving or reciprocating stirrers. For this purpose I fix round the lower end of the chimney a closed receptacle partially filled with water, from the lower end of which one or more pipes descend through the flue and into the fire box of the apparatus, so that these pipes being filled with water from the receptacle steam will be generated therein, and will rise into the upper part of the receptacle which acts as a steam chamber, whence the steam is led through a pipe, provided with a stop valve, to the slide valve of a small steam cylinder fixed on the casing of the apparatus. The piston rod of the steam cylinder either imparts motion to a small crank shaft that is geared to the shaft of the revolving stirrer; or if the stirrer only requires reciprocating motion, the piston rod may be connected to an arm on the rocking shaft carrying the stirrers.

[*Price 4d.*]

SPECIFICATION in pursuance of the conditions of the Letters Patent filed by the said Paul Crochet in the Great Seal Patent Office on the 11th August 1877.

PAUL CROCHET, of Paris, Boulevard Magenta, No. 49, Gentleman. "AN IMPROVED APPARATUS COMBINED WITH A STEAM CYLINDER FOR WORKING UP AND TORREFYING BITUMINOUS AND OTHER SUBSTANCES."

My Invention relates to apparatus for working up and heating or melting asphalte or other bituminous matters and the like, wherein such bituminous matters are contained in a vessel or cauldron, in which are revolving or reciprocating stirrers, and which is heated by a fire and flue wholly or partially surrounding it and leading to a chimney.

My improvements have for their object to utilise the heat of the fire employed for the above purpose for producing the requisite motive power for actuating the revolving or reciprocating stirrers. For this purpose I fix round the lower end of the chimney a closed receptacle partially filled with water, from the lower end of which one or more pipes descend through the flue and into the fire box of the apparatus, so that these pipes being filled with water from the receptacle, steam will be generated therein and will rise into the upper part of the receptacle, which acts as a steam chamber, whence the steam is led through a pipe provided with a stop valve to the slide valve of a small steam cylinder fixed on the casing of the apparatus. The piston rod of the steam cylinder either imparts motion to a small crank shaft that is geared to the shaft of the revolving stirrer, or if the stirrer only requires reciprocating motion, the piston rod may be connected to an arm on the rocking shaft carrying the stirrers.

DESCRIPTION OF THE DRAWINGS.

Fig. 1 shews a cross section of my before described improved apparatus; and Fig. 2 shews a side view.

Within the usual fire chamber A are arranged horizontal tubes a, a, serving as steam generators, and connected to vertical tubes a^1, a^1, communicating with a water reservoir b surrounding the lower end of the chimney d. The steam generated rises into the upper part of the chamber b, from which, as required, it is conducted to the cylinder c of the engine by opening the cock f on the pipe f^1. By this means the stirrers inside the cauldron B are actuated by the agency of the steam generated in the tubes a, a^1, acting on the steam engine c which drives the stirrers through the shaft g provided with a fly wheel, and connected by gearing to the shaft of the stirrers. Any greater number of generating tubes a may be employed, and the engine c may be arranged either horizontally, vertically, or inclined. The apparatus is mounted on wheels in the ordinary manner.

Having thus described the nature of my Invention, and in what manner the same may be performed, I claim the use of apparatus for working up and heating or melting bituminous or other substances wherein a steam generator heated by the fire employed for heating the said substances supplies the necessary steam for working an engine that drives the stirring apparatus, substantially as herein described.

In witness whereof, I, the said Paul Crochet, have hereunto set my hand and seal, this Twenty-sixth day of July, in the year of our Lord One thousand eight hundred and seventy-seven.

PAUL CROCHET. (L.S.)

Witness,

JULES ARMENGAUD,
Of Paris, Boulevard de Strasbourg, 23,
Civil Engineer.

LONDON: Printed by GEORGE EDWARD EYRE and WILLIAM SPOTTISWOODE,
Printers to the Queen's most Excellent Majesty. 1877.